

What is claimed is:

1. A cylinder block assembly for an internal combustion engine comprising:

a cylinder block having a cylinder bore formed therein extending from a first surface, wherein the cylinder bore has a cylinder bore surface, wherein the cylinder block is formed from a first material, and wherein the first surface defines a cylinder head sealing surface;

a cylinder head mounted to the cylinder head sealing surface; and

a coating covering at least part of the cylinder bore surface and at least part of the cylinder head sealing surface, the coating comprising a second material different than the first material, wherein the coating has a truncated outer edge.
2. The cylinder block assembly of claim 1, wherein a portion of the coating that covers the at least part of the cylinder head sealing surface has a minimum thickness of at least about 0.01 mm.
3. The cylinder block assembly of claim 1, wherein a portion of the coating that covers at least part of the cylinder head sealing surface extends radially outwardly from the cylinder bore in a plane that is perpendicular to an axis of the cylinder bore.
4. The cylinder block assembly of claim 1, wherein the coating extends radially outwardly at least 1 mm beyond the cylinder bore.
5. The cylinder block assembly of claim 1, wherein:

the cylinder block further comprises a chamfer formed in a transition area between the cylinder bore and the cylinder head sealing surface, and

the coating covers the chamfer.
6. The cylinder block assembly of claim 5, wherein the chamfer is frusta-conical, and a height of the frusta-conical chamfer in an axial direction of the cylinder bore is between 0.1 mm and 2.5 mm
7. The cylinder block assembly of claim 6, wherein the frusta-conical chamfer is inclined at an angle of between 15° and 70° to the cylinder bore.
8. The cylinder block assembly of claim 5, wherein the coating on the chamfer is not finished.

9. The cylinder block assembly of claim 1, wherein a depression is disposed in the first surface of the cylinder block, the depression surrounding the cylinder bore and being covered by the coating, and wherein the portion of the coating covering the depression has a surface that is level with an uncoated portion of the cylinder head sealing surface.

10. The cylinder block assembly of claim 9, wherein the depression has a diameter that is greater than an inside diameter of the cylinder head at the intersection between the cylinder head and the sealing surface.

11. The cylinder block assembly of claim 9, wherein a portion of the coating that covers the depression is finished.

12. The cylinder block assembly of claim 9, wherein the depression has a substantially uniform depth.

13. The cylinder block assembly of claim 9, wherein the depression has a minimum depth, relative to the first surface, of at least 0.01 mm.

14. The cylinder block assembly of claim 9, wherein the depression has a step that abuts the truncated outer edge of the coating.

15. The cylinder block assembly of claim 1, wherein a recess for a cylinder head gasket is formed in the cylinder head sealing surface of the cylinder block and surrounds the cylinder bore.

16. The cylinder block assembly of claim 15, wherein the coating extends outwardly over the cylinder head sealing surface to an inner edge of the recess.

17. A cylinder block assembly for an internal combustion engine comprising:
a cylinder block having a cylinder bore formed therein extending from a first surface, wherein the cylinder bore has a cylinder bore surface, wherein the cylinder block is formed from a first material, and wherein the first surface defines a cylinder head sealing surface;
a cylinder head mounted to the cylinder head sealing surface; and
a coating covering at least part of the cylinder bore surface and at least part of the cylinder head sealing surface, the coating comprising a second material different than the first material, wherein a portion of the coating that covers at least part of the cylinder head sealing surface has a substantially uniform thickness.

18. A method for producing a cylinder block for an internal combustion engine comprising:

forming at least one cylinder bore in a first surface of a cylinder block comprising a first material, the first surface defining a cylinder head sealing surface;

forming at least one depression with a minimum depth of at least 0.01 mm in the cylinder head sealing surface around the cylinder bore; and

coating at least part of a running surface of the cylinder bore and at least part of the depression in the cylinder head sealing surface with a coating, which comprises a second material that differs from the first material, in such a way that a surface of a portion of the coating that covers the depression is level with an adjacent portion of the first surface that defines the cylinder head sealing surface.

19. The method of claim 18, wherein the depression defines a step between the depression and the first surface, wherein the coating has a truncated outer edge, and wherein the coating is applied such that the truncated outer edge abuts the step.

20. The method of claim 18, wherein the portion of the coating that covers the depression and the portion of the first surface that define the cylinder head sealing surface are finished by grinding.

21. The method of claim 18, further comprising:

forming a chamfer between the running surface of the cylinder bore and the first surface before coating the cylinder block; and

subsequently coating the chamfer with the coating.

22. The method of claim 21, wherein the coating is applied by plasma spraying and a lance of the plasma spraying apparatus is angled relative to a longitudinal direction of the cylinder bore during the coating of the chamfer.

23. The method of claim 18, further comprising:

forming a recess for a cylinder head gasket in the cylinder head sealing surface before coating the cylinder block; and

covering the recess when the coating is applied.

24. The method of claim 23, wherein the coating is applied to the cylinder block over an entire surface that extends between the cylinder bore and an inner edge of the recess.